January 31, 2014

Via Hand Delivery and Email

Mr. James D. Atterholt
Chairman
Indiana Utility Regulatory Commission
101 W Washington Street, Suite 1500E
Indianapolis, Indiana 46204

Dear Chairman Atterholt,

Indianapolis Power & Light Company (IPL) is pleased to provide the Commission with this second annual update on the implementation of the recommendations from the O'Neill Management Consulting report issued December 2011.

The attached report provides an update on the remaining eight open IPL commitments from the 2012 update report. As of December 31, 2013 IPL has completed all work associated with the eight commitments.

If you or any of the Commission Staff have any questions regarding this annual update report, please let us know.

Sincerely,

Barry J. Bentley
Senior Vice President, Transmission and Distribution Operations

INDIANAPOLIS POWER & LIGHT COMPANY

REPORT IN RESPONSE TO O'NEILL CONSULTING INDEPENDENT ASSESSMENT OF INDIANAPOLIS POWER & LIGHT COMPANY'S DOWNTOWN UNDERGROUND NETWORK FOR THE YEAR ENDED 2013

JANUARY 31, 2014

1.0 Introduction

In September of 2011, Indianapolis Power & Light Company (IPL) and the Indiana Utility Regulatory Commission (IURC) engaged O'Neill Management Consulting to do an independent assessment of the IPL Downtown Network System in response to an increase in network events in the first part of 2011. O'Neill Management Consulting issued their *Independent Assessment of Indianapolis Power & Light's Downtown Underground Network* in December 2011[1]. In January 2012 IPL issued its response to the O'Neill Report which offered ten recommendations to address the issues identified in their assessment[2]. IPL committed to address all ten recommendations in the O'Neill Report and made additional commitments beyond the O'Neill Report's recommendations. Included in those additional commitments were progress reports to be filed at the end of 2012 and 2013. IPL filed the 2012 Network Assessment report on January 25, 2013. The 2012 report summarized IPL's progress on the ten recommendations from the O'Neill Report and IPL's progress on the additional commitments that the Company had made.

At the end of 2012, IPL had completed all recommendations included in the O'Neill Report. As previously stated, IPL had made certain commitments in addition to the O'Neill recommendations. Completion of some of those commitments was scheduled to carry over into 2013. This 2013 Network Assessment Report by IPL is intended to address the status of the eight open commitments from the January 25, 2013 report concerning IPL's status on the additional commitments.

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[1] Link to 2011 O'Neill Report
http://www.in.gov/iurc/files/IPL_Downtown_Network_Audit_Report_-_Final_Report(1).pdf

[2] Link to IPL 2012 Action Plan
http://www.in.gov/iurc/files/IPL_Action_Plan(1).pdf

The following table summarizes the open eight commitments as shown in the IPL 2012 Network Assessment Report.

Recommendation	Continuation item	Report Action
3 - Material standards	Report effectiveness of standards change and shields	Due end of 2013
4 - Network protectors and transformers	Report 2013 and 2014 replacement volume	Submit report at the end of 2013 and 2014
5 - Asset management	Additional resources and process	Additional report due at the end of 2013
6 - Inspection technology	Report results at the end of 2013 and 2014	Submit report at the end of 2013 and 2014
7 - SCADA project	Issue final business practices	Third quarter 2013
8 - Small scale technology	Fault detectors	Install on last circuit after proactive cable replacement
8 - Small scale technology	Swiveloc™ lift/locking manhole covers in selected locations	Install complete - Report on effectiveness in 2014
9 - GIS mapping and modeling	Build model of secondary network	Complete, incorporate use into Engineering design process

For reference, the complete list of recommendations from the O'Neill Report and the IPL commitments are included in Appendix A of this report.

2.0 Summary

As reported in the 2012 Network Assessment report, IPL completed all recommendations in response to the O'Neill Management Consulting Report by the end of 2012. There were commitments that IPL made in addition to the O'Neill recommendations. IPL completed all of the commitments by the end of 2012 with the exception of eight items that were scheduled to carry-over into 2013. As of the end of 2013 all of the open commitments are now complete. There are two on-going reporting items that will continue into 2014. They are:

- Recommendation 4, report on effectiveness of standards change for the network transformers and the number of network transformers and network protectors replaced in 2014. (Covered in Section 3.2)
- Recommendation 6, report on the technology being used for manhole and vault inspections (Covered in Section 3.4)

For these two items, a final report will be submitted to the Commission in January 2015 for year ending 2014 to cover their on-going status and effectiveness. That will complete all of the commitments that IPL made in response to the Downtown Network Assessment.

3.0 Status of Open Commitments from 2012

This section will highlight each of the eight remaining open commitments at the end of 2012 and provide their status as of December 31, 2013.

3.1 Recommendation #3 – Material Standards

This open item dealt with monitoring and evaluating the effectiveness of the deflector shields installed over the network transformers. It is IPL's opinion that the deflector shields appear to be doing what they were intended to do. The shields prevent trash and debris from sidewalk traffic from accumulating on the top of the network transformers in the vaults. This prevents wet debris from causing corrosion issues on top of the transformers. At the end of 2012 there were two vaults awaiting installation of deflector shields pending structural work on the vaults. That structural work was completed in 2013 and the deflector shields were installed in both vaults. Deflector shields are now in place on all 319 network transformers. Installation of deflector shields is the IPL standard practice for any new network vault that is built from this point forward.

3.2 Recommendation #4 – Network Protectors & Network Transformers

This open item dealt with a change in the design of IPL's network transformers and reporting on the number of transformers and network protectors replaced in 2013. IPL changed the network transformer design specification in 2012 to eliminate the termination chamber and instead use a fully insulated bolted bushing-well design. In 2013 IPL installed eight network transformers, of which four of those replacements utilized the new design specifications.

IPL replaced seven network protectors in 2013. Three of the network protectors that were replaced had aluminum bus. There are 41 remaining aluminum bus network protectors on the system.

IPL also completed the retrofit of 18 network transformers that were in stock. These units were sent back to the manufacturer and were retrofitted to the new design with bushing wells. These units are now in stock and available to be installed as needed. There have been no failures on any of the transformers with the new termination design.

In addition, IPL's field operating procedures were changed in 2013 to no longer vent the network protector before manually operating the protector. Protector venting causes seal wear and reseal difficulties. Venting the network protector before manually operating was previously implemented to address a volatile gas issue identified in the early 1990's. The O'Neill report recommended IPL review this practice and determine if it was still needed. IPL conducted gas monitoring and determined the practice could be discontinued once the Network SCADA system was fully functional which occurred in 2013.

IPL will provide another report in January 2015 to update the number of network transformers and number of network protectors replaced in 2014.

3.3 Recommendation #5 – Asset Management

This open item dealt with IPL commenting on its Asset Management program as it applies to the Downtown Network System. IPL continues to improve the process of identifying and minimizing risk across all assets. Assets in the Downtown Network System (manholes, vaults, transformers and protectors) have been assigned individual asset criticality ratings. These criticality ratings are based on seven factors (history of steam and exposure to high heat, high traffic area, number of cables, etc.). Subject matter expert input is used to weigh the importance of these inputs for an overall criticality score.

Inspection data continues to be collected electronically with tablet computers. There are 23 individual indicators with various selectable states that are used to determine the health of the inspected assets. Pictures are required when certain abnormal states are selected, which generate automated emails. The criticality scores together with the health indicators from inspections provide a quantifiable value of individual asset risks. This data is used to prioritize work.

The Asset Management Group was consolidated for the AES US entities to leverage the expertise and resources available across the United States and has grown to twenty-nine (29) people in 2013. Additionally, at the AES level an Asset Management Standards document has been established consisting of fifteen (15) individual standards. This document closely follows PAS-55 (the only publicly available asset management standard). IPL is committed to achieve an AES Asset Management maturity level of three which will further develop the asset management processes across the entire AES US business in 2014.

3.4 Recommendation #6 – Inspection Technology

This open item dealt with the technology being used for manhole and vault inspections and reporting the results. IPL remains committed to manhole and vault inspections. The manhole and vault inspection program remained on schedule in 2013. IPL completed 449 manhole inspections and 73 vault inspections in 2013. The field crews continue to use the tablet computers for the inspections. IPL did not make any significant changes to the handheld tablets in 2013. The tablets are meeting the needs of the field crews and back office staff in its ability to gather the data and transfer it to the asset management software application. IPL continues to review the effectiveness of the hardware and software to determine if changes are needed.

IPL will provide another report in January 2015 to update status of the inspection technology and any changes made to the technology in 2014.

3.5 Recommendation #7 –Downtown Network SCADA Project

This open item dealt with the final steps of the Downtown Network Supervisory Control and data Acquisition (SCADA) project. The Downtown Network SCADA project including network protector relay controls and fault indicators was fully placed in service in 2013 and is performing as designed.

Network Protector Relays

Information from the network protectors is available to Transmission System Operators for operation of the network system. Eaton VaultGard network protector relays are connected by twisted-pair copper cable to data collectors which are connected by fiber optic cable to Remote Terminal Units (RTUs). The RTUs link to the Energy Control System (ECS) which is available at IPL's primary and backup control centers. The Transmission Operators can now monitor and control the devices through the ECS SCADA system. Functionality includes providing the status of the network protectors, as well as voltages and currents in addition to the ability to remotely operate the network protector devices. The Downtown Network SCADA system gives the operators much more information about the real-time status of the Downtown Network system. The remote control capability is a safety improvement for the field crews. It eliminates the need for them to operate a network protector manually in abnormal conditions.

Business Practices

The remaining open item was to put the initial business practices in place which occurred in 2013.

The confidential procedures include a description of the fault indicators with drive-by monitoring capabilities and network protector relay technologies, screen shots in ECS, a listing of data points in ECS, and pictures of the equipment. Locations of equipment and communications devices are indicated on Downtown Network maps which are available for field crew leaders and operators. Operating protocols are included for staff and field personnel.

IPL is using the network protector data in the following ways:

1. Asset management staff has created displays using PI data from network protector relays to understand loading per feeder as part of the distribution planning process.
2. Engineering staff have created additional draft displays to view loading by vault. These will be made available to operators as part of a PI Historian upgrade project in Q2 2014.

The fault indicators have reduced troubleshooting for approximately 14 events in 2013. We estimate this has saved about four hours per event on the total restoration time.

3.6 Recommendation #8 – Small Scale Technology – Fault Indicators

This open item dealt with the final installation of fault indicators on certain network primary circuits. IPL installed the final sets of fault indicators on the Edison Primary Network feeders that were upgraded with new cable. The IPL field crews have found the fault indicators to be very helpful when locating

primary cable faults. IPL is considering the installation of additional fault indicators. The additional fault indicators would provide information on smaller sections of the feeders.

IPL has been tracking the operation of the Fault Indicators when faults have occurred on the network primary feeders. The fault indicators have been operating correctly and have greatly aided in the location of faults on the network primary cable. As predicted, the use of the fault indicators has greatly reduced the time needed to locate the fault on the cable, which reduces the amount of time the cable is exposed to test voltage. This also has decreased the restoration time allowing the circuit to be returned to service quicker and getting the network system back into a normal configuration quicker.

3.7 Recommendation #8 – Small Scale Technology – SwiveLoc Manhole Covers

This open item dealt with IPL commenting on the effectiveness of the Swiveloc locking manhole covers. Installation of the SwiveLoc manhole covers has continued. IPL installed another fifty Swiveloc covers in 2013. A total 252 Swiveloc covers have been installed through December 31, 2013. There was one splice failure in a manhole with a Swiveloc cover in 2013. There was no indication that the fault event created an over-pressurization situation in the manhole which would have caused the Swiveloc cover to operate. It appears that the Swiveloc manhole cover performed as designed and remained in place. IPL will continue to monitor the performance of the existing Swiveloc manhole covers and determine if additional Swiveloc manhole covers are warranted in the future.

IPL did not have any reportable manhole events in 2013 where the manhole cover became dislodged.

3.8 Recommendation #9 – GIS Mapping and modeling

This open item dealt with completion of the mapping of the Downtown network system in IPL's GIS system and the interface to the CYME modeling and analysis software application. The mapping of the Downtown Network was completed in 2013 and the network information is now available in the GIS system used by the design engineers and the field crews. The CYME application has been used to model future design changes to the Downtown network system. There are also plans to expand the training for the Design Engineers in 2014 that use the CYME analysis application. The CYME tool is used for both the Downtown network system and the overhead general distribution system modeling analysis.

4.0 Conclusion

IPL remains committed to assuring the safe and reliable operation of the Downtown Network System. IPL has changed processes, procedures, and design specifications for the Downtown Network System to achieve and continue the commitments made to address the recommendations in the 2011 O'Neill Report.

IPL will issue one more report in January 2015 that will cover on-going progress with Recommendation 4, Network Protectors and Transformers, and Recommendation 6, Inspection Technology. IPL has completed the remaining open commitments from the 2012 Network Assessment Report and no further updates are planned on those items.

Appendix A – O'Neill Report Recommendations and IPL Commitments as of December 31, 2013

Tier 1 Recommendations and status as of December 31, 2013

Recommendation	Status related to O'Neill recommendation
1 - Citizens Energy Coordination	Complete
2 - Enhanced inspections	Complete
3 - Material standards	Complete
4 - Network protectors and transformers	Complete
5 - Asset management	Complete

IPL Tier I Commitments and Status as of December 31, 2013

Recommendation	IPL Commitment	Status related to IPL commitment
1 - Citizens Energy Coordination	Address manholes too hot to inspect	Complete
	Inspect manholes after heat is mitigated	Complete
	Create ongoing coordination and communication	Complete and continuing
	Replace damaged cables	Complete and continuing
2 - Enhanced inspections	Inspection procedure	Complete and continuing
	Audits of inspection	Complete and continuing
	Continuous improvement	Complete and continuing
	Use tablet computers for inspection	Complete and continuing
	Track repairs	Complete and continuing
3 - Material standards	Adjust standard for termination chambers	Complete
	Begin retrofit	Started and continuing
	Install deflector shields	Complete
	Report effectiveness of standards change and shields	Provide report, due in 2013
4 - Network protectors and transformers	Identify aluminum bus	Complete
	Sample 33% of identified with aluminum bus	Complete
	Inspect and pressure test where evidence of water ingress	Complete by deflector shield strategy
	Pressurize protectors after opened	Complete by deflector shield strategy
	Toluene gas and venting work practice change	Essentially complete: Formal practice change to be issued with completion of SCADA
	Seal or replace protectors that will not hold pressure	Complete by deflector shield strategy
	Report 2013 and 2014 replacement volume	Provide reports for 2013 and 2014
5 - Asset management	Additional resources and process	Complete - additional report due at the end of 2013
	Cable failure database	Complete and continuing
	Ivara software	Complete and continuing
	Failure reporting to IURC	Complete and continuing
	Update cable root cause procedure	Complete
	Condition and impact based maintenance and replacement	Complete and continuing

Tier II Recommendations and status as of December 31, 2013

Recommendation	Status related to O'Neill Consulting recommendation
6 - Inspection technology	Complete
7 - SCADA project	Complete
8 - Small scale technology	Complete
9 - GIS mapping and modeling	Complete
10 - Oil testing and FR fluid	Complete

IPL Tier II Commitments and Status as of December 31, 2013

Recommendation	IPL Commitment	Status related to IPL commitment
6 - Inspection technology	Use tablet computers with business rules for inspection	Complete and ongoing
	Use Ivara software and upload from tablets	Complete and ongoing
	Evaluate option to show Citizens facilities on IPL tablets	Complete
	Review the inspection results, audit findings and inspection processes annually	2012 review is complete. Practices and procedures in place for future years
	Report results at the end of 2013 and 2014	Report results at the end of 2013 and 2014
7 - SCADA project	Update of deployment plan	Complete
	Review benefits, users, practices	Complete
	Issue final business practices	Third Quarter 2013
8 - Small scale technology	Thermal imaging	Complete and ongoing
	Fault detectors	Install on last circuit after proactive cable replacement
	Swiveloc™ lift/locking manhole covers in selected locations	Install complete - Report on effectiveness in 2014
9 - GIS mapping and modeling	Add CBD details to GIS map	Complete
	Build model of secondary network	Complete - incorporate use into Engineering design process
10 - Oil testing and FR fluid	Re-evaluate Dissolved Gas Analysis on network transformers	Complete
	Consider fire retardant fluid	Complete